

**STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
320 West 4th Street, Suite 200, Los Angeles, California 90013**

**FACT SHEET
WASTE DISCHARGE REQUIREMENTS
FOR
FORMER KING KARE AUTO CENTER**

**ORDER NO. R4-2002-0030 (SERIES NO. 004)
UST FILE NO. I-20811; CUFID NO. 8675**

FACILITY ADDRESS

Former King Kare Auto Center
15045 East Imperial Highway
La Mirada, CA 90638

FACILITY MAILING ADDRESS

Tesoro Petroleum Companies, Inc.
3450 South 344th Way, Suite 100
Auburn, WA 98001

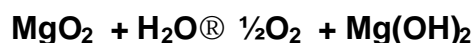
PROJECT DESCRIPTION

The Former King Kare Auto Center (Latitude: N33° 55' 00", Longitude: E118° 00' 30") is in a shopping center parking lot and is bounded by Del Taco to the west, American Tire Depot to the east, Home Depot to the north, and the Chiropractic/Medical Group to the south (across Imperial Highway). The Former King Kare Auto Center had utilized four 12,000-gallon USTs prior to 1990s. From 1992 to 2001, corrective action activities were conducted at the site. The results of these investigations indicated that the underlying soil and groundwater had been contaminated with gasoline and diesel fuel constituents including benzene, toluene, ethylbenzene, xylenes (BTEX), and methyl tertiary butyl ether (MTBE). A soil vapor extraction system had been operated for the impacted soil remediation from January 1998 through July 1999. However, the MTBE plume in the groundwater has migrated off-site and extended over an area of approximately 250 feet by 50 feet. The analytical result of groundwater samples indicated that MTBE concentration up to 4,000 µg/l and benzene, toluene, ethylbenzene, and xylenes (BTEX) concentrations were ranged from 4,400 µg/l to ND, 19,000 µg/l to ND, 6,500 µg/l to ND, and 38,000 µg/l to ND, respectively.

A Workplan for In Situ Groundwater Remediation dated April 19, 2001, was approved by this Regional Board on May 14, 2001. The in-situ groundwater remediation work plan proposes to place an ORC barrier near the down-gradient end of the MTBE plume to remediate groundwater contamination. The target zone for remediation is approximately 15 feet in thickness of groundwater in the upper water-bearing zone. This groundwater unit consists of recent alluvium of silty clayey sand, clay, and clayey sand and is underlain by the Exposition Aquifer.

VOLUME AND DESCRIPTION OF ORC BARRIER

ORC is a proprietary formulation of magnesium peroxide intercalated with food-grade phosphate and offers a passive, cost-effective, low intensity approach to accelerating aerobic bioremediation in the oxygen-limited contaminated subsurface. ORC is environmentally safe that time-releases oxygen when hydrated in accordance with the following reaction:



When placed in aquifer, ORC releases oxygen for six months to one year and raises a significant level of oxygen up to 30 parts per million (ppm). The distribution of dissolved oxygen

(DO) in aquifer material is governed by chemical diffusion and the transportation to downgradient areas by advection. Since oxygen is often the limiting factor for aerobic microbes, indigenous aerobic microbes flourish in the presence of long-lasting oxygen and rapidly degrade groundwater pollutants into harmless products such as carbon dioxide and water.

The injection field is to include an array of two by thirteen injection points, forming a 52-feet wide barrier. The injection points will have a center-spacing of 4 feet. The dosing rate will be 2.6 pounds product per vertical foot of saturated zone, approximately 15 to 30 feet below grade, or 39 pounds per injection point. Approximately a total of 1,014 pounds of ORC, will be emplaced at the proposed location. ORC will be applied to the saturated zone using direct-push hydraulic equipment. At this point, it is expected that a one-time emplacement is adequate to remediate the groundwater contamination, without causing any groundwater degradation.

The ORC barrier emplacement activity is expected to start on October 15, 2002. There have been no adverse impacts associated with these products for remediating dissolved hydrocarbon fuel plumes in groundwater. There may be small increases associated with soluble gases such as dissolved oxygen (DO) and carbon dioxide. A groundwater and bioprocesses monitoring program will be implemented to verify the efficacy of the ORC addition to this site. The monitoring wells include one upgradient well: MW-7, and one downgradient well: MW-8 (see attached Figure 2). The proposed locations of two groundwater monitoring wells appear to be insufficient for groundwater monitoring. Therefore, you are required to install three additional monitoring wells including the proposed two monitoring wells, one in between ORC barrier and MW-8 and two monitoring wells approximately 30 feet crossgradient of ORC barrier at each side, respectively.